Permit #: **28.0803-PSD**

Effective Date: **Proposed**

SOUTH DAKOTA DEPARTMENT OF

ENVIRONMENT AND NATURAL RESOURCES

PREVENTION OF SIGNIFICANT DETERIORATION

AIR QUALITY PRECONSTRUCTION PERMIT

Steven M Pirner, Secretary
Department of Environment and Natural Resources

Under the South Dakota Air Pollution Control Regulations

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to construct and operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to construct and operate the permitted units at the location designated below and under the listed conditions:

A. Owner

1. Company name and address

- Central Minnesota Municipal Power Agency;
- Heartland Consumers Power District;
- Montana-Dakota Utilities Co., a Division of MDU Resources Group;
- Western Minnesota Municipal Power Agency; and
- Otter Tail Corporation d.b.a. Otter Tail Power Company.

Otter Tail Power Company as operator of Big Stone II
PO Box 496
215 South Cascade Street
Fergus Falls, Minnesota 56538-0496

2. Actual Source Location and Mailing Address if Different from Above

48450 144th Street
Big Stone City, South Dakota

3. Permit Contact

Terry Graumann; Manager, Environmental Services
(218) 739-8407

4. Facility Contact

Terry Graumann; Manager, Environmental Services
(218) 739-8407

5. Responsible Official

Terry Graumann; Manager, Environmental Services
(218) 739-8407

B. Type of Operation

A coal fired electric steam generating facility. The facility has a maximum 600 megawatt net output.

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1.0 STANDARD CONDITIONS

1.1 <u>Construction and operation of source.</u> In accordance with Administrative Rules of South Dakota (ARSD) 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall construct and operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated July 20, 2005, and June 20, 2006, unless modified by the conditions of this permit. The application consists of the application forms, updates, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted. The control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Operating Rate	Control Device
#7a	Rotary car dumper building	3,600 tons per hour [1]	Baghouse
#7b			Baghouse
#7c			Baghouse
#7d			Baghouse
#13	Super-critical pulverized coal fired boiler fired on subbituminous coal, ultra low sulfur diesel, or biodiesel. The super-critical pulverized coal fired boiler will be equipped with low NOx burners.	6,000 million Btus per hour heat input [1]	Baghouse, wet flue gas desulfurization and selective catalytic reduction
#14	Fire pump fired on ultra low sulfur diesel and biodiesel	420 horsepower [1]	Catalyzed diesel particulate filter
#15	Generator fired on ultra low sulfur diesel and biodiesel	2,220 kilowatts [1]	Catalyzed diesel particulate filter
#16	Industrial cooling tower with 18 cells	312,540 gallons per minute [1]	Drift eliminators
#17	Coal reclaim system	380 tons per hour [2]	Baghouse
#20	Limestone reclaim conveyor	11 tons per hour [2]	Baghouse
#21	Limestone receiving system	11 tons per hour [2]	Baghouse
#22	Plant coal transfer and silo fill system	380 tons per hour [2]	Baghouse
#23	Fly ash silo bin vent	28 tons per hour [2]	Baghouse
#24	Limestone day bin vent #1	11 tons per hour [2]	Baghouse
#25	Booster pump (boiler) fired on ultra low sulfur diesel and biodiesel	225 horsepower [1]	Catalyzed diesel particulate filter
#26	Coal plant transfer system	380 tons per hour [2]	Baghouse
#27	Coal crusher house	380 tons per hour [2]	Baghouse
#29	Limestone pre-crusher building	200 tons per hour [1]	Baghouse
#30	Coal stack out system	380 tons per hour [2]	Baghouse

Unit	Description	Operating Rate	Control Device
#33	Booster pump (coal area) fired on ultra low sulfur diesel and biodiesel	225 horsepower [1]	Catalyzed diesel particulate filter
#34	Pretreatment soda ash bin vent	20 tons per hour [1]	Baghouse
#35	Pretreatment lime bin vent	20 tons per hour [1]	Baghouse

[1] – The operating rate is the nominal or manufacturer listed operating rate noted in the PSD application and are descriptive only; and

[2] – The operating rates are the annual average rates of the equipment or system noted in the PSD application and is descriptive only.

1.2 Duty to comply. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 Property rights or exclusive privileges. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(12), the State's issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition. In accordance with South Dakota Codified Law (SDCL) 34A-1, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than $10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry. In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records that are required under this permit;
3. Inspect operations regulated under this permit; and/or

4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Credible evidence. In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is violation of this permit. Credible evidence is as follows:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
   a. A monitoring method approved for the source pursuant to 40 Code of Federal Regulations (CFR) § 70.6(a)(3) and incorporated in this permit; or
   b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
   a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61 and 75; or
   b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in section (1) or (2)(a).

2.0 CONSTRUCTION AND OPERATING PERMIT DEADLINES

2.1 Commence construction. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(r)(2), the owner or operator shall commence construction within 18 months of the effective date of this permit. If construction is delayed or interrupted for a period of 18 months or more this permit becomes invalid. The owner or operator may apply, before the end of the 18-month period, to the Secretary for an extension. The Secretary may grant an extension after the owner or operator satisfactorily demonstrates that an extension is justified.

2.2 Submit operating permit application. In accordance with ARSD 74:36:05:03.01, the owner or operator shall submit a complete permit application to revise permit #28.0801-29 within 12 months after commencing operation of the pulverized coal fired boiler (Unit #13). For the purpose of this condition, commencing operation means the initial startup of the boiler, which is the first date that the boiler was operated when firing pulverized coal. A complete permit application shall include all of the requirements specified in ARSD 74:36:05:12, including periodic monitoring and compliance assurance monitoring activities necessary to assure compliance.

2.3 Submit acid rain permit application. In accordance with ARSD 74:36:16:01, the owner or operator shall submit a complete Acid Rain permit application 24 months prior to the initial startup of the pulverized coal fired boiler (Unit #13).

3.0 RECORD KEEPING AND REPORTING REQUIREMENTS

3.1 Record keeping and reporting. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application. The records shall be maintained on-site for the first two years and may be maintained off-site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources
PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3181

3.2 Signatory Requirements. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:12(17), all applications submitted to the Secretary shall be signed and certified by a responsible official. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

3.3 Certification statement. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including reports, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

"I certify that based on information and belief formed after reasonable inquiry the statements and information in this document and all attachments are true, accurate, and complete."

3.4 Construction date notification. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the date construction commenced on the permanent structures for the pulverized coal fired boiler system. The notification shall be postmarked within 15 days after the date construction commenced.

3.5 Initial startup notification. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the initial startup date of the pulverized coal fired boiler (Unit #13). The notification shall be postmarked within 15 days after the date of initial startup.

3.6 Operational records. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall maintain records on the length of time Unit #7, #14, #15, #25, #30 and #33 operated during each day and calendar month. A 12-month rolling total for Unit #7, #14, #15, #25, #30 and #33 shall be calculated for each calendar month.

4.0 BEST AVAILABLE CONTROL TECHNOLOGY (BACT) LIMITS

4.1 BACT limits for particulate matter. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of particulate matter 10 microns in diameter or less (PM10) in excess of the emission limits specified in Table 4-1 for the appropriate permitted unit, operation, and process ~~except during periods of startup, shutdown, and malfunction for Unit #13, #14, #15, #25 and #33~~. **Compliance with the PM10 BACT emission limits in Table 4-1 for Unit #13, #14, #15, #25, and #33 during periods of startup, shutdown, and malfunction shall be based on permit condition 4.8.**

Table 4-1 – PM10 BACT Emission Limits

Unit	Description	PM10 Emission Limit
#7a	Rotary car dumper building	0.01 grains/standard cubic foot (filterable)**; and 3.2 pounds per hour (filterable)** [1]
#7b		0.01 grains/standard cubic foot (filterable)**; and 3.2 pounds per hour (filterable)** [1]
#7c		0.01 grains/standard cubic foot (filterable)**; and 3.2 pounds per hour (filterable)** [1]
#7d		0.01 grains/standard cubic foot (filterable)**; and 3.2 pounds per hour (filterable)** [1]
#13	Super-critical pulverized coal fired boiler	72 pounds/hour (filterable) [1]**;** 0.012 pounds/million Btu (filterable) [1]; and 0.03 pounds/million Btu (filterable and condensable) [1, 2]
#14	Fire pump	New Source Performance Standard – see permit condition ~~5.8~~ **5.7; and 0.1 pounds per hour (filterable)** [1]
#15	Generator	New Source Performance Standard – see permit condition ~~5.8~~ **5.7; and 0.7 pounds per hour (filterable)** [1]
#17	Emergency reclaim hopper	0.01 grains/standard cubic foot (filterable)**; and 0.6 pounds per hour (filterable)** [1]
#20	Limestone reclaim hopper	0.01 grains/standard cubic foot (filterable)**; and 0.6**

Unit	Description	PM10 Emission Limit
		pounds per hour (filterable) [1]
#21	Limestone receiving hopper	0.01 grains/standard cubic foot (filterable)**; and 0.5 pounds per hour (filterable)** [1]
#22	Plant transfer/silo fill system	0.01 grains/standard cubic foot (filterable)**; and 3.0 pounds per hour (filterable)** [1]
#23a	Fly ash silo bin vent	0.01 grains/standard cubic foot (filterable)**; and 0.9 pounds per hour (filterable)** [1]
#23b		0.01 grains/standard cubic foot (filterable)**; and 0.9 pounds per hour (filterable)** [1]
#24	Limestone day bin vent #1	0.01 grains/standard cubic foot (filterable)**; and 0.3 pounds per hour (filterable)** [1]
#25	Booster pump (boiler)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7; and 0.1 pounds per hour (filterable)** [1]
#26	Transfer conveyor	0.01 grains/standard cubic foot (filterable)**; and 0.4 pounds per hour (filterable)** [1]
#27	Coal crusher house	0.01 grains/standard cubic foot (filterable)**; and 1.3 pounds per hour (filterable)** [1]
#29	Limestone pre-crusher building	0.01 grains/standard cubic foot (filterable)**; and 0.2 pounds per hour (filterable)** [1]
#30	Coal stack out system	0.01 grains/standard cubic foot (filterable)**; and 0.7 pounds per hour (filterable)** [1]
#33	Booster pump (coal area)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7; and 0.1 pounds per hour (filterable)** [1]
#34	Pretreatment soda ash bin vent	0.01 grains/standard cubic foot (filterable)**; and 0.1 pounds per hour (filterable)** [1]
#35	Pretreatment lime bin vent	0.01 grains/standard cubic foot (filterable)**; and 0.16 pounds per hour (filterable)** [1]

[1] – Compliance with the emission limit is based on the average of three test runs; and

[2] – If the testing per permit condition 6.7 demonstrates an emission rate less than 0.03 pounds per million Btus (filterable and condensable), the emission limit shall be lowered to the average of the three tests (nine test runs) plus two standard deviations or 0.018 pounds per million Btus, whichever is greater. In no case shall the limit be greater than 0.03 pounds per million Btus (filterable and condensable).

4.2 BACT limits for carbon monoxide. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of carbon monoxide in excess of the emission limits specified in Table 4-2 for the appropriate permitted unit, operation, and process~~, except during periods of startup, shutdown, and malfunction~~. **Compliance with the carbon monoxide BACT emission limits in Table 4-2 for #14, #15, #25, and #33 during periods of startup, shutdown, and malfunction shall be based on permit condition 4.8.**

Table 4-2 – Carbon Monoxide BACT Emission Limits

Unit	Description	Carbon Monoxide Emission Limit
#13	Super-critical pulverized coal fired boiler	900 pounds/hour [1] and 0.15 pounds/million Btu [1]
#14	Fire pump	New Source Performance Standard – see permit condition ~~5.8~~ **5.7** [2]
#15	Generator	New Source Performance Standard – see permit condition ~~5.8~~ **5.7** [2]
#25	Booster pump (boiler)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7** [2]
#33	Booster pump (coal area)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7** [2]

[1] – Compliance with the emission limit is based on a 30-day rolling average; and
[2] – Compliance with the emission limit is based on the average of three test runs.

4.3 BACT limits for volatile organic compounds as carbon. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of volatile organic compounds (VOCs) as carbon in excess of the emission limits specified in Table 4-3 for the appropriate permitted unit, operation, and process~~, except during periods of startup, shutdown, and malfunction~~. **Compliance with the volatile organic compound as carbon BACT emission limits in Table 4-3 during periods of startup, shutdown, and malfunction shall be based on permit condition 4.8.**

Table 4-3 – Volatile Organic Compound as Carbon BACT Emission Limits

Unit	Description	VOC as Carbon Emission Limit [1]
#13	Super-critical pulverized coal fired boiler	0.0036 pounds/million Btu
#14	Fire pump	New Source Performance Standard – see permit condition ~~5.8~~ **5.7**
#15	Generator	New Source Performance Standard – see permit condition ~~5.8~~ **5.7**
#25	Booster pump (boiler)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7**
#33	Booster pump (coal area)	New Source Performance Standard – see permit condition ~~5.8~~ **5.7**

[1] – Compliance with the emission limit is based on the average of three test runs.

4.4 BACT limit for sulfuric acid mist. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of sulfuric acid mist in excess of the emission limits specified in Table 4-4 for the appropriate permitted unit, operation, and process~~ except during periods of startup, shutdown, and malfunction~~. **Compliance with the sulfuric acid mist BACT emission limits in Table 4-4 during periods of startup, shutdown, and malfunction shall be based on permit condition 4.8.**

Table 4-4 – Sulfuric Acid Mist BACT Emission Limit

Unit	Description	Sulfuric Acid Mist Emission Limit [1]
#13	Super-critical pulverized coal fired boiler	0.005 pounds/million Btu

[1] – Compliance with the emission limit is based on the average of three test runs.

4.5 BACT limit for fluoride. In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of fluoride in excess of the emission limits specified in Table 4-5 for the appropriate permitted unit, operation, and process~~, except during periods of startup, shutdown, and malfunction~~. **Compliance with the fluoride BACT emission limits in Table 4-5 during periods of startup, shutdown, and malfunction shall be based on permit condition 4.8.**

Table 4-5 – Fluoride BACT Emission Limit

Unit	Description	Fluoride Emission Limit [1]
#13	Super-critical pulverized coal fired boiler	0.0006 pounds/million Btu

[1] – Compliance with the emission limit is based on the average of three test runs.

4.6 Paved roads and parking lots. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall pave all haul roads and parking lots within Otter Tail Power Company's property boundaries at this location.

4.7 Cooling tower. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall install 0.0005 percent efficient drift eliminators on Unit #16.

4.8 Compliance with BACT limits during ~~periods of~~ startup, shutdown, and malfunction. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall utilize good work and maintenance practices and manufacturers' recommendations to minimize emissions during, and the frequency and duration of, startup, shutdown, and malfunction events for Unit #13, #14, #15, #25 and #33. The owner or operator shall develop and implement a startup, shutdown, and malfunction plan for Unit #13, #14, #15, #25 and #33. The startup, shutdown, and malfunction plan shall describe, in detail, procedures for operating and maintaining Unit #13, #14, #15, #25 and #33 during periods of startup, shutdown, and malfunction; a program of corrective action for malfunctions; and record keeping requirements identifying that the procedures and corrective actions were completed. The startup, shutdown, and malfunction plan shall be submitted to and approved by the Secretary at least 90 days prior to the initial startup of Unit #13. **This permit condition is not applicable to Unit #13 for carbon monoxide.**

5.0 OTHER APPLICABLE LIMITS

5.1 **New source performance standard for Unit #13.** In accordance with ARSD 74:36:07:03, as referenced to 40 CFR §§ 60.40a through 60.51a, the owner or operator shall comply with all applicable standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements in the standards of performance for electric utility steam generating units for which construction is commenced after September 18, 1978. The specific emission limits from this new source performance standard are as follows:

1. In accordance with 40 CFR § 60.42Da(b), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during periods of startup, shutdown, or malfunction. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement;
2. In accordance with 40 CFR § 60.42Da(c), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain particulate matter in excess of 0.14 pounds per megawatt hour gross energy output or 0.015 pounds per million Btu. The particulate standard applies at all times except during periods of startup, shutdown, or malfunction;
3. In accordance with 40 CFR §§ ~~60.42~~ **60.43**Da(a) and ~~60.42~~ **60.43**Da(i), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain sulfur dioxide in excess of the emission limit specified in Table 5-1.

Table 5-1 – Sulfur Dioxide Emission Limit

Unit	Description	Sulfur Dioxide Emission Limit [1]
#13	Super-critical pulverized coal fired boiler	1.4 pounds per megawatt-hour gross energy output, or 5 percent of the potential combustion concentration (95 percent reduction)

[1] – Compliance with the sulfur dioxide limit and percent reduction are based on a 30-day rolling average.

The sulfur dioxide emission standards apply at all times except during periods of startup, shutdown, or when both emergency conditions exist and the procedures defined in the new source performance standard are implemented;

4. In accordance with 40 CFR §§ 60.44Da(a) and 60.44Da(e)(1), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain nitrogen oxide in excess of 1.0 pound per megawatt-hour gross energy output. Compliance with the nitrogen oxide limit is based on a 30-day rolling average. The nitrogen oxide emission standard applies at all times except during periods of startup, shutdown, or malfunction; and
5. ~~In accordance with 40 CFR § 60.45Da(a)(2), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain mercury in excess of 0.000066 pounds per megawatt-hour gross energy output. Compliance with the mercury limit is based on a 12-month rolling average. The mercury standard applies at all times except during periods of startup, shutdown, or malfunction.~~

~~**5.2 Mercury allowances for Unit #13.** In accordance with ARSD 74:36:19, as referenced to 40 CFR §§ 60.4101 through 60.4176, the owner or operator shall comply with all applicable mercury allowances, reporting, monitoring, recordkeeping, testing, and notification requirements of the Mercury Budget Trading Program.~~

5.2 Acid rain requirements for Unit #13. In accordance with ARSD 74:36:16, the owner or operator shall comply with all applicable standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements of the Acid Rain program.

5.3 State opacity limit. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table 1-1. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement. An exceedance of the opacity limit is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunction. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator of the source is not a malfunction and is considered a violation.

5.4 New source performance standard for nonmetallic mineral process plants. In accordance with ARSD 74:36:07:27, as referenced to 40 CFR §§ 60.670 through 60.676, the owner or operator shall comply with all applicable standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements in the standards of performance for nonmetallic mineral processing plants. The specific emission limits from this new source performance standard are as follows:

1. In accordance with 40 CFR § 60.672(a)(1), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #20, #21, #24 and #29, that contain particulate matter in excess of 0.022 grains per dry standard cubic foot; and
2. In accordance with 40 CFR §§ 60.672(a)(2) and 60.672(f), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #20, #21, #24 and #29, that exhibit greater than 7 percent opacity.

5.5 Operational limit for Unit #14, #15, #25 and #33. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall not operate Unit #14, #15, #25 and #33 for more than 500 hours per 12-month rolling period for each unit. The first month of the 12-month rolling total shall begin after a reasonable shakedown period. A reasonable shakedown period shall not exceed 180 days from the initial startup of Unit #13.

5.6 Coal handling operational limits. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall limit the operation of Unit #7 and #30 to 18 hours per day for each unit and 5,000 hours per 12-month rolling period for each unit. The first month of the 12-month rolling total shall begin after a reasonable shakedown period. A reasonable shakedown period shall not exceed 180 days from the initial startup of Unit

#13.

5.7 New source performance standard for stationary compression ignition internal combustion engines. In accordance with 40 CFR §§ 60.4200 through 60.4219, the owner or operator shall comply with all applicable standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements in the standards of performance for stationary compression ignition internal combustion engines. The specific emission limits from this new source performance standard are as follows:

1. In accordance with 40 CFR §§ 60.4201(a) and 60.4202(d), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #14, #15, #25 and #33 that contain particulate matter in excess of 0.15 grams per horsepower hour;
2. In accordance with 40 CFR §§ 60.4201(a) and 60.4202(d), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #14, #15, #25 and #33 that contain carbon monoxide in excess of 2.6 grams per horsepower hour;
3. In accordance with 40 CFR § 60.4201(a), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #15 that contain nitrogen oxide and non-methane organic compounds in excess of 4.8 grams per horsepower hour; and
4. In accordance with 40 CFR § 60.4202(d), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #14, #25 and #33 that contain nitrogen oxide and non-methane organic compounds in excess of 3.0 grams per horsepower hour.

5.8 New source performance standard for coal preparation plants. In accordance with ARSD 74:36:07:16, as referenced to 40 CFR §§ 60.250 through 60.254, the owner or operator shall comply with the particulate standards, monitoring, and testing requirements in the standards of performance for coal preparation plants. The specific emission limit from this new source performance standard for Unit #7, #17, #22, #26, #27 and #30 is a 20 percent opacity limit.

6.0 PERFORMANCE TESTS

6.1 Performance test may be required. In accordance with ARSD 74:36:11:02, the Secretary may request a performance test. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test that is conducted while operating the unit less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of the performance test required by the Secretary, if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

6.2 Test methods and procedures. The owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A; 40 CFR Part 63, Appendix A; and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A; 40 CFR Part 63, Appendix A; and 40 CFR Part 51,

Appendix M is not federally applicable or federally required.

6.3 **Representative performance test.** In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

6.4 **Submittal of test plan.** In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification that outlines what needs to be completed for approval.

6.5 **Notification of test.** In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

6.6 **Performance test report.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. A brief description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and
10. Any other information required by the test method.

6.7 **Initial performance test for Unit #13.** In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on Unit #13. The initial performance test shall be conducted to determine emission rates of opacity, particulate matter 10 microns in diameter or less (filterable and condensable), total suspended particulate matter (filterable and condensable), sulfur dioxide, nitrogen oxide, volatile organic compounds as carbon, carbon monoxide, ~~mercury,~~ sulfuric acid mist, and fluoride. The initial performance test shall be

conducted within 180 days after initial startup of Unit #13. The owner or operator shall conduct two additional performance tests on Units #13. The two tests shall be conducted to determine emission rates of particulate matter 10 microns in diameter or less (filterable and condensable) and total suspended particulate matter (filterable and condensable). The second test shall be completed within 60 to 180 days after the initial test. The third test shall be completed within 60 to 180 days after the second test.

6.8 Initial performance test for Unit #14, #15, #25 and #33. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on Unit #14, #15, #25 and #33. The initial performance tests shall be conducted to determine emission rates of opacity, particulate matter 10 microns in diameter or less (filterable), nitrogen oxide, volatile organic compounds as carbon, and carbon monoxide. The initial performance test shall be conducted within 180 days after initial startup of Unit #13.

6.9 Initial performance test for other units. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on the following units:

1. Unit #7a, #7b, #7c, or #7d;
2. Unit #17, #26, or #30;
3. Unit #20 or #21;
4. Unit #22;
5. Unit #23;
6. Unit #24 or #29;
7. Unit #27; and
8. Unit #34 or #35.

The performance tests shall be conducted to determine emission rates of particulate matter 10 microns in diameter or less (filterable). The owner or operator shall conduct the performance tests within 180 days of initial startup of the pulverized coal fired boiler (Unit #13).

6.10 Initial certification of continuous emission monitoring system. In accordance with ARSD 74:36:16:04 and ARSD 74:36:19:15, the owner or operator shall conduct the initial certification of each continuous emission monitoring system required in permit condition 8.1 within 180 days of initial startup of Unit #13.

7.0 FUGITIVE DUST CONTROLS

7.1 Paved road and parking area controls. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall use a mechanical sweeper that collects particulate and is equipped with wet suppression, use a vacuum sweeper, or water flush all paved roads and parking areas during spring, summer and fall. During winter months or during freezing weather, the paved roads and parking lots shall be cleaned with the mechanical sweeper that collects particulate and is equipped with wet suppression or a vacuum sweeper. An alternative method may be approved by the Secretary if the owner or operator provides

documentation that the alternative method is equivalent to the methods specified in this permit condition in controlling fugitive dust emissions. The frequency of cleaning will be on an as needed basis to comply with the opacity limit in permit condition 7.4.

7.2 Open storage pile control. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall sample and analyze the silt content of open storage piles that have a height greater than or equal to three feet and have a total surface area greater than or equal to 150 square feet. The silt content analysis shall be conducted once per calendar year and in accordance with ASTM C-136 or another equivalent method approved by the Secretary. Silt is defined as any material with a particulate size less than 74 micrometers in diameter and passes through a number 200 sieve. The owner or operator shall implement one of the following control measures for each open storage pile that has a silt content of four percent by weight or greater:

1. Apply chemical stabilizer to the surface area of the open storage pile in a sufficient quantity and frequency to comply with the opacity limit in permit condition 7.4;
2. Apply water to the surface area of the open storage pile on an as needed basis to comply with the opacity limit in permit condition 7.4;
3. Install at least a two-sided enclosure with walls, which extend, at a minimum, to the top of the open storage pile and complies with the opacity limit in permit condition 7.4; or
4. An alternative method that the owner or operator has demonstrated can comply with the opacity limit in permit condition 7.4 and is approved by the Secretary.

7.3 Waste pit controls. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall control fugitive dust emissions from a waste pit. A waste pit means an area where particulate matter from the process equipment or pollution control devices is deposited for storage or disposal and the disposal area unit(s) has not been closed. The owner or operator shall implement one of the following control measures for waste pits:

1. Apply a soil cement or similar application that is approved by the Secretary over the entire waste pit area;
2. Apply water spray to adequately create a crusted surface over the entire waste pit area; or
3. Implement a combination of wind protection (wind-fence, wind-screen, three wall enclosures) and soil cement or water spray applications.

Waste pit controls shall be applied or constructed in a manner that maintains compliance with the opacity limit in permit condition 7.4.

7.4 Opacity limit for fugitive sources. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall not discharge a visible emission to the ambient air of a density equal to or greater than 20 percent opacity from a paved road or parking lot, open storage pile, track out area, or waste pit. The 20 percent opacity reading is based on a series of two minute averages with a minimum observation period of six minutes. The opacity reading shall be determined by 40 CFR Part 60, Appendix A, Method 9.

If an operation exceeds the opacity limit, the Secretary will allow the owner or operator two opportunities to correct the exceedance with existing controls and/or control measures. In the event of a third exceedance from the same operation, the Secretary will notify the owner or operator that the Best Available Control Measure (BACM) for that operation must be reevaluated. The owner or operator shall reevaluate BACM for that operation and submit a written proposal to the Secretary on the proposed new BACM for the operation within 60 days of receiving the Secretary's notification. The Secretary shall approve or disapprove the proposed new BACM within 60 days of receiving the proposal from the owner or operator.

7.5 Record keeping requirements for fugitive sources. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall develop, maintain, and implement a fugitive dust plan. The fugitive dust plan shall be maintained on-site and shall contain the following items:

1. **The specific work practice standards that will be implemented as required in permit conditions 7.1, 7.2, and 7.3;**
2. **The frequency the opacity readings required in permit conditions 7.4 will be conducted; and**
3. **Documentation that the work practice standards were implemented and a copy of each opacity reading.**

8.0 CONTINUOUS EMISSION MONITORING SYSTEMS

8.1 Continuous emission monitoring systems. In accordance with ARSD 74:36:07, ARSD 74:36:09, ARSD 74:36:13, and ARSD 74:36:16, the owner or operator shall install, calibrate, maintain, and operate continuous emission monitoring systems for opacity, carbon dioxide, sulfur dioxide, nitrogen oxide, flue gas flow, **and** carbon monoxide, ~~and mercury~~ on Unit #13. The continuous emission monitoring systems shall measure and record the emissions at all times, including periods of startup, shutdown, malfunctions or emergency conditions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, zero and span adjustments, and when Unit #13 is not in operation.

8.2 Performance specifications and quality assurance. In accordance with ARSD 74:36:07, ARSD 74:36:09, ARSD 74:36:13, and ARSD 74:36:16, the continuous emission monitoring systems on Unit #13 shall meet the performance specifications in 40 CFR Part 60, Appendix B and the quality assurance requirements in 40 CFR Part 60, Appendix F; or the performance specifications in 40 CFR Part 75, Appendix A and the quality assurance requirements in 40 CFR Part 75, Appendix B.

9.0 RECOMMENDATION

A review of this facility indicates it can operate in compliance with South Dakota's Air Pollution Control rules and the federal Clean Air Act. The Secretary, therefore, recommends that the Board of Minerals and Environment issue this permit with conditions to ensure compliance with SDCL 34A-1 and the federal Clean Air Act. Any questions pertaining to the Secretary's recommendation should be directed to Kyrik Rombough, Natural Resources Engineering Director, at (605) 773-3151.